

ORSC Methane Ascent/Descent Engine Technology Development,
Phase I

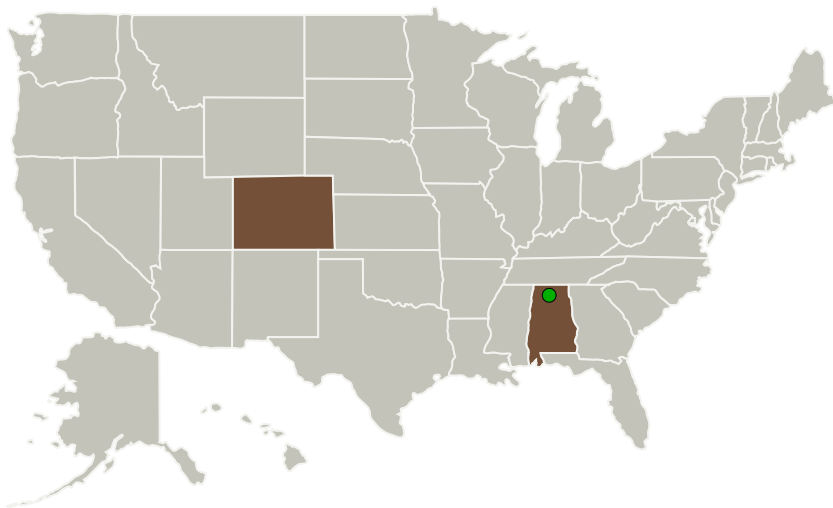
Completed Technology Project (2015 - 2015)



Project Introduction

Special Aerospace Services (SAS) is proposing a new and innovative ascent/descent engine using methane as its propellant. This engine will utilize the concepts of the Oxidizer Rich Staged Combustion (ORSC) cycle of the RD-8 to improve on performance over existing hardware. This SBIR program will leverage existing work SAS has done in conjunction with DARPA to on the RD-8 preburner to design and analyze a new engine with the benefits of the RD-8, but being able to use methane as the propellant. Additive manufacturing will be used to build the components of the engine to reduce cost and limitations in design.

Primary U.S. Work Locations and Key Partners



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Engine Technology
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Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Project Transitions	2
Images	2
Organizational Responsibility	2
Project Management	2
Technology Maturity (TRL)	2
Technology Areas	3
Target Destinations	3

Organizations Performing Work	Role	Type	Location
Special Aerospace Services	Lead Organization	Industry Small Disadvantaged Business (SDB), Women- Owned Small Business (WOSB)	Boulder, Colorado
● Marshall Space Flight Center(MSFC)	Supporting Organization	NASA Center	Huntsville, Alabama

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Primary U.S. Work Locations

Alabama

Colorado

Project Transitions

June 2015: Project Start

December 2015: Closed out

Closeout Summary: ORSC Methane Ascent/Descent Engine Technology Development, Phase I Project Image

Closeout Documentation:

- Final Summary Chart Image(<https://techport.nasa.gov/file/139315>)

Images



Briefing Chart Image

ORSC Methane Ascent/Descent Engine Technology Development, Phase I

(<https://techport.nasa.gov/image/131691>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Special Aerospace Services

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

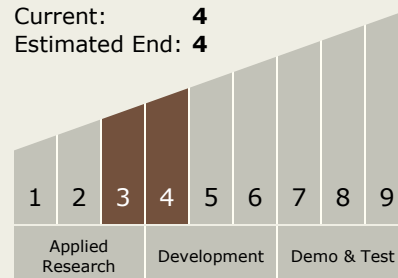
Carlos Torrez

Principal Investigator:

Timothy A Bulk

Technology Maturity (TRL)

Start: **3**
Current: **4**
Estimated End: **4**



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Technology Areas

Primary:

- TX01 Propulsion Systems
 - └ TX01.1 Chemical Space Propulsion
 - └ TX01.1.3 Cryogenic

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System